USAF Medical Service
Digest

Fall 1992
Vol. 43, No. 3

Wiesbaden — Where American Hostages Come Home to Freedom Hall — Prepares for Change in 1993 (see page 11)

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From the Editor

The Board and I would like to know what you think of the *Digest.* Do you find it useful, informative, interesting? We value your opinion, and we welcome your comments and suggestions. Please write to:

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Elizabeth G. Taber

ELIZABETH G. TABER
Editor, *USAF Medical Service Digest*
Office of the Surgeon General

Front cover: Jesse Turner, a visiting math professor at Beirut University College, Beirut, Lebanon, was kidnapped on Jan. 24, 1987. After his release from captivity, he was treated at the 7100 CSW Medical Center, Wiesbaden, Germany, until Oct. 25, 1991.

Message from the Surgeon General

Supporting Our Quality Air Force Through a Career Field Review

"We can best serve humanity by keeping ourselves strong." These words spoken by General John J. Pershing in 1928 hold true for the Air Force today. To stay strong — and get stronger — while paring down our force structure requires careful and continual self-examination.

One major effort underway throughout the Air Force is a top-to-bottom career field review. In support of the main tenets of our Quality Air Force, the Air Force chief of staff has set the review in motion to streamline grade structures, to provide a clear career path for members entering the Air Force and to improve the quality of Air Force education and training programs.

We in the Medical Service have taken this opportunity to examine our own structure by reevaluating all officer, enlisted and civilian Air Force Specialty Codes (AFSCs). Clearly, such a review will allow us to more effectively distribute constrained medical resources. By reviewing our fiscal 1995 requirements, we will ensure that we have the right mix of people in the right places by identifying and correcting grade imbalances, the difference between what we have and what we need. Once we establish the types of people and experience levels needed at each facility, we can better plan to recruit, train and retain those people.

In April 1992, as part of this review, we also took a close look at our career progression guidance for each career field and began to do some overhauling. We developed the career path pyramid, a consolidated visual aid that clearly outlines the major opportunities within each specialty. This is new for the enlisted folks who did not previously have a well-defined career path for each specialty. As a result of the review, someone starting out in the Air Force will have a simpler, clearer way to understand how their career track will work, and supervisors will have a better tool to use in career counseling sessions.

The Medical Service review was briefed to the Air Force chief of staff at the end of July, and pending the completion of the career field review by all functional areas, you can expect the final career products to flow to the field in the near future.

What is the bottom line? We are reviewing and refining our programs because we cannot afford to stand still if we intend to stay strong. Staying strong takes work, and although the future may seem uncertain, we must still do our best to be prepared for it. As an organization with a proven track record of success, we need not be intimidated by the challenges of the coming years. We will keep doing the same jobs that we have always done, with the same talent and determination that we have always exhibited, and we will do our jobs as well as and better than before. The future is indeed bright for the Air Force Medical Service.

Alexander M. Sloan
Lieutenant General, USAF, MC
Surgeon General

Historic Fort MacArthur Treats Patients

Col. Robert C. Armstrong, MSC

Building 30 at Fort MacArthur in San Pedro, Calif., has an interesting and varied past. Constructed in 1918, the historic building has served as headquarters for the fort and as a provost marshal's office. In the early 1980s Fort MacArthur was turned over to the Air Force to provide housing for people assigned to Headquarters Space Systems Division (SSD), Los Angeles AFB, Calif., located approximately 20 miles north of the fort. Because the relatively small AFSC Clinic Los Angeles was a good distance away and had no emergency services capability, efforts began as early as 1983 to establish a small dispensary at Fort MacArthur, providing minimal medical support for active duty members and their families living there. Finally, after seven years of hard work and determination, on March 5, 1990, a ribbon-cutting ceremony marked the completion of building 30's renovation and the construction of the Fort MacArthur Clinic.

Historic and Beautiful Fort MacArthur

When Fort MacArthur was turned over to the Air Force, they inherited a historic piece of land. The original reservation was received by the U.S. military from public domain in 1888. This beautiful reservation at Point Fermin was named Fort MacArthur in honor of U.S. Army Lt. Gen. Arthur MacArthur, who received the Congressional Medal of Honor in 1863 for conspicuous bravery at the Battle of Missionary Ridge. He was the father of five-star general Douglas MacArthur.

During World War II, railroad tracks traversed the fort's shoreside, "lower reservation," and accommodated steady trainloads of men to the main Southern California induction center at the post. Among those processed for induction were actors Clark Gable and James Stewart. Fort MacArthur served as the headquarters for Harbor Defense of Los Angeles before and throughout World War II, and subsequently became the home of Nike missiles for coastal defense.

A trip to this scenic fort will captivate any visitor. The 96-acre "middle reservation" overlooks San Pedro Harbor and the Pacific Ocean. Atop the housing areas on a clear day, the view spans Long Beach Harbor and Santa Catalina Island.

The Fort MacArthur Clinic in San Pedro, Calif., occupies one of the oldest buildings in the Air Force, built in 1918.

The Story Behind the Clinic

The tri-agency satellite clinic, staffed by Air Force, Navy and Aetna Health Plans personnel, did not appear at Fort MacArthur overnight. As concern began to grow for the large number of small children living at Fort MacArthur without the benefit of an on-site medical facility, a clinic supply committee was established in 1983 to address the issue of opening a clinic at the fort. After several suitable buildings were identified, a Medical Necessity Evaluation and Economic Documentation System (MEDNEEDS) package, requesting the establishment of a child care clinic to operate twice weekly for four hours a day, was submitted to the major command (MAJCOM), but was initially rejected. However, medical support for residents of the fort continued to be a major concern of the SSD.

In April 1986 the AFSC Clinic Los Angeles requested and received a space utilization study from the Regional Health Facilities Office (HFO) in San Francisco, Calif. The HFO representatives concluded that building 30 at Fort MacArthur would be adequate for providing limited medical services after an expenditure of approximately $75,000. The base commander agreed to supply the necessary funds, which ultimately totalled $120,000.

At this point, the MAJCOM suggested a 12-month test program, moving one military physician from the main facility to Fort MacArthur at least two days a week for three hours each day. The physician would have the help of a medical technician and a medical administrative specialist or a volunteer. Services would include treatment of acute adult and pediatric minor illnesses, minor traumas (first aid). Medical records would not be maintained at the fort, and emergency services, including ambulance transport, would not be available. During the test phase, patients would be seen by appointment, and services would be limited to active duty members and their families living at Fort MacArthur.

After some additional modifications were made to the first floor of building 30, the clinic began its limited operations. The testing period was successful, and a survey showed that the base population recognized the need for medical care at the fort. A new MEDNEEDS package was soon drawn up and submitted to the MAJCOM who reviewed and forwarded it to the Air Force surgeon general. Finally, the clinic concept received approval, and work began in earnest.

With funding from the MAJCOM, renovation of the first floor and basement of building 30 was completed. The first floor was modified to accommodate radiological equipment, and the basement to house a laboratory, pharmacy and provider office/examination rooms. Money was also set aside for future renovation of the second floor of the building. Next, the clinic needed to be staffed.

Under the CHAMPUS Reform Initiative resource-sharing agreement, the clinic received help from Aetna Health Plans. Aetna provided a pediatrician, a pediatric nurse and a lab technician. The Navy initially sent a pharmacy technician, radiological technician and two medical technicians. The Air Force provided a general medical technician and two medical administrative technicians. In addition to these highly qualified staff members, countless CPR-certified volunteers offered their time to help at the clinic.

The Clinic Behind the Story

Currently the Fort MacArthur Clinic operates Monday through Friday from 9:00 - 5:00 and provides pediatric and ancillary services, including the laboratory and pharmacy. The laboratory performs basic hematology procedures including routine serologies, urinalysis and microbiology. Many of the samples and specimens are drawn at the clinic and forwarded to referral labs or sent by courier to the Los Angeles Clinic laboratory for testing. The courier makes a daily run to the main clinic, carrying everything from lab specimens and pharmacy requirements to medical records.

Dr. Julie Noble (left), a resource-sharing physician hired under the auspices of the CHAMPUS Reform Initiative, treats Kamlyn Sellers at the Fort MacArthur Clinic.

The pharmacy is staffed full-time and contains about 150 separate drug items. When a prescription is filled, the Navy pharmacy technician takes the prescription to the physician on duty for double-checking and issuance to the patients. Refills may also be dropped off and filled at the clinic if the item is stocked.

An ad hoc committee, established shortly after the clinic opened, continues to help the clinic operate smoothly by acting as a process action team. The team, made up of representatives from the clinic's staff, Fort MacArthur's director of volunteers, Aetna Health Plans personnel and others as needed, constantly addresses ways to improve health care delivery. Currently, the clinic plans to improve services by hiring a resource-sharing family practitioner to treat CHAMPUS-eligible patients.

The opening and operation of the new clinic and its services has brought praise and thanks from the customers at Fort MacArthur. The clinic has an unblemished reputation among its regular users. Many housing area residents enjoy being able to walk to the clinic from their quarters. This convenient, homey clinic has been extremely well-received, and patient complaints have been virtually non-existent.

Conclusion

Since the satellite clinic was first thought of, several other military housing areas have been completed in San Pedro. This increase, coupled with the pending 1994-96 closure of the Naval Hospital Long Beach, makes the demand for military medical services in the South Bay region even greater. The Fort MacArthur clinic is proud to support the AFSC Clinic Los Angeles by helping meet the health care needs of military families throughout Southern California.

Col. Robert C. Armstrong is the commander of the AFSC Clinic Los Angeles at Los Angeles AFB, Calif.

CMSgt. Michael L. Roder

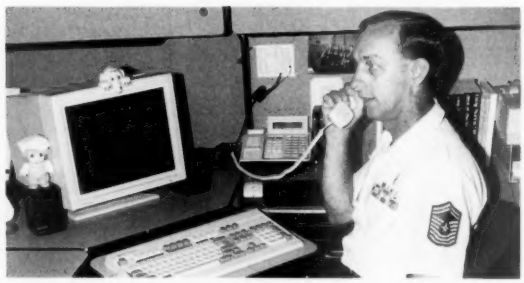
"It's a great job!" said CMSgt. Michael L. Roder of his duty assignment as chief of dental enlisted affairs in the office of the Air Force surgeon general. "I like the idea that I represent all of the dental enlisted people and that I can help make their lives less complicated." Roder has been an Air Force advisor since December 1991, and has a Medical Service career spanning more than 21 years.

Roder joined the Air Force in early 1971 and entered basic training at Lackland AFB, Texas. Then he took a medical fundamentals course where he volunteered to become a dental technician. "I learned how to be a dental assistant solely through on-the-job training," said Roder. "Then, in the Vietnam era, there were so many military inductees that they could not all be sent to a tech school, so mine was a direct-duty assignment." After five assignments, Roder was asked to go to work for the headquarters, Strategic Air Command dental surgeon. While there, he received notice of his current duty assignment.

As an Air Force advisor, Roder keeps Maj. Gen. Donald J. Butz, assistant surgeon general for dental services, apprised of how policy decisions will affect the dental service enlisted force. He also provides information about enlisted training requirements and about how the NCOs and airmen ought to be used at the base level. "I represent the dental enlisted force to the general," said Roder. "On the other hand, I also represent him to the enlisted people." Roder gives briefings to the enlisted force on how manpower requirements are determined and about programs that tend to make people in the field nervous, such as the Voluntary Separation Initiative (VSI) and the Special Separation Benefit (SSB).

Also in the office, Roder is responsible for regulations, forms and other duties that enlisted people take care of in the field. "I am deeply involved in rewriting the dental service regulation right now," he said. "A lot of people think that our goal is to reduce the size of the regulation, but the real goal is to ensure that the regulation establishes policy. We are working hard to remove a lot of procedural guidance."

Roder spends a good part of his day on the telephone. "I tell people that my line is always open. If they are asking advice on career decisions, I am glad to listen." Because policy questions from the field are filtered through the major commands (MAJCOMs), he spends a lot of time talking to MAJCOM dental surgeons and the enlisted people in their offices. He keeps his finger on the pulse of the career field this way. "I cannot respond to every special interest item, but if I get the feeling that the whole career field is concerned about something, then it is my responsibility to them to address it," he said. Of course, Roder takes advantage of any chance to hang up the phone and make personal contact with his people. "I wish that all of the medical career field advisors had even more opportunity to travel with the surgeon general and corps directors, but I recognize the fiscal constraints."



Sometimes Roder misses the face-to-face interaction of being a supervisor at a base, but he appreciates the even greater opportunity that he has now to make an impact. "I do not see myself as the head of my career field," he said. "My opinion is not nearly as important as the opinion of the aggregate. My job is to compile all the input that comes from the bases — the NCOs, the airmen out there — boil it down and make recommendations to the general. I like being here because I can help the folks out there treating patients."

As he has progressed through his Medical Service career, Roder has learned the importance of seeing the big picture. "It continues to amaze me how interrelated we all are," he said. "Everything that any one of us does daily has a domino effect." Working in the office of the surgeon general has reinforced that lesson. "I cannot be concerned about only dental enlisted people. I have to first be concerned about the whole Medical Service and about how decisions will affect each base's ability to perform its mission."

Roder has also learned the importance of family. He, his wife Sandra, an active duty medical administration technician, and their two daughters, Meredith, 12, and Melanie, 15, live in Springfield, Va. Although Roder enjoys his home computer, stereo equipment and stationary bike, he said, "Most of my free time is spent trying to do things together as a family."

A Bill's Journey Through Congress

Patti S. Turner

Who determines the Medical Service budget? Sets manpower authorization ceilings and creates new programs? The U.S. Congress. Congress has a two-part budget cycle: authorizations and appropriations. Authorization laws produce annual amendments to the U.S. Code and establish federal agencies and programs. Appropriation laws, in essence, put money in the bank for agencies and programs. An authorized agency/program is powerless without an appropriated fund, and an appropriated fund remains unspent without an authorized claimant.

The legislative cycle is a long and tedious process repeated each year to craft the Defense Authorization and Appropriations Bills. For military medical departments, activity on the bills focuses in four subcommittees under the House/Senate Appropriation Committees (HAC and SAC) and the House/Senate Armed Services Committees (HASC and SASC). Action on the Appropriation Bill centers in the Subcommittees on Defense under the HAC and SAC. Action on the Authorization Bill occurs in the Military Personnel and Compensation Subcommittee of the HASC and the Manpower and Personnel Subcommittee of the SASC.

Congressional staff members on the four subcommittee staffs play key roles in much of the legislative process. They immerse themselves in particular programs, such as managed care or medical readiness. These specialists do most of the staff work and research that shape the final legislative products. The interaction between Capitol Hill and the Department of Defense (DOD) is surprisingly frequent and may take many forms, including congressional hearings and meetings with congressional staff members. DOD and the services also respond to Congress' review of General Accounting Office audits, Rand studies and other documents.

Work begins early in the surgeon general's office to prepare for the congressional hearing cycle. In December, the surgeon general's staff begins putting together background and talking papers on key programs and policies. The medical inquiries and information directorate (SGI) uses these papers to draft a witness statement for the surgeon general, which is usually an overview of the past year and a look ahead to the coming year. In January, Congress usually announces the hearing schedule for the next several months. Subcommittee hearings may focus on a particular topic, such as medical readiness, or may review the entire medical program. Medical hearings are often scheduled in February, March, April or as late as May.

Before the hearing, a surgeon general witness statement must be written and cleared for presentation to the committee. Clearance involves Air Staff and DOD review and often review by the Office of Management and Budget to assure compliance with the President's budget.

Meanwhile, the surgeon general prepares for the hearing. A series of "skull sessions" are held where members of the surgeon general's staff role-play as congressional subcommittee members. Questions are posed to the general and a critique follows. A comprehensive background book is assembled, with tabs for many subject areas likely to be discussed at the hearing.

Sometimes, the actual questions are provided to the witnesses before the hearing. Usually, these are available just the day before. The day of the hearing, the witnesses arrive early, accompanied by one or two of their own staff members. Although the subcommittee may have a dozen members, only a handful may actually attend the hearing. Most hearings are open to the public and attract a large gathering of people who are interested in military medicine — from service-affiliated organizations, like the Non Commissioned Officer's Association and the Air Force Association, to contractors interested in new programs, tourists visiting Washington and social studies classes studying the legislative process.

The witnesses present an abbreviated version of their witness statement and then answer the committee's questions. The five-minute rule usually prevails, giving each committee member five minutes to ask questions. During the hearing, committee members may come and go, staff members may suggest questions to their bosses, telephone messages are passed to members and members may recess to vote on other matters. Consequently, the hearings often do not flow smoothly.

Following the hearing, the official transcript is reviewed by the witnesses for accuracy. At this time, additional questions may be submitted by the committee and must be answered in writing, using a strict format that varies by committee.

The hearing is only one interaction that Capitol Hill has with military medical departments. Throughout the year, members of the medical Air Staff work on many issues and may visit Capitol Hill to update the congres-

sional staff on programs or to answer a particularly vexing constituent inquiry. In the Secretariat, the offices of legislative liaison and financial management liaison serve as the main conduit of information from the Air Force to Capitol Hill. Secretariat staff officers manage particular subject-matter accounts, relying on Air Staff medical members for information, and frequently visit congressional staff members and travel with congressmen. The rapport they develop facilitates better understanding of medical issues.

After holding hearings, each subcommittee begins to mark-up its bill. They each craft a version of the defense bill called their "mark" and send it to the full committee level (HAC/SAC, HASC/SASC). Differences between the House and Senate marks must be resolved in a joint conference.

As each of the four full committees completes its mark, it is analyzed by the services and DOD. Before the House and Senate joint conference, DOD and the services may ask Congress to change its position. A formal process called a "heartburn appeal" presents views and urges congressional support for a particular position.

As the conference progresses and differences are resolved, the final Defense Authorization and Appropriations Bills are written. These must be brought to the floor and voted on by the House and Senate. The final stop is the White House. With the president's signature, the bills become law.

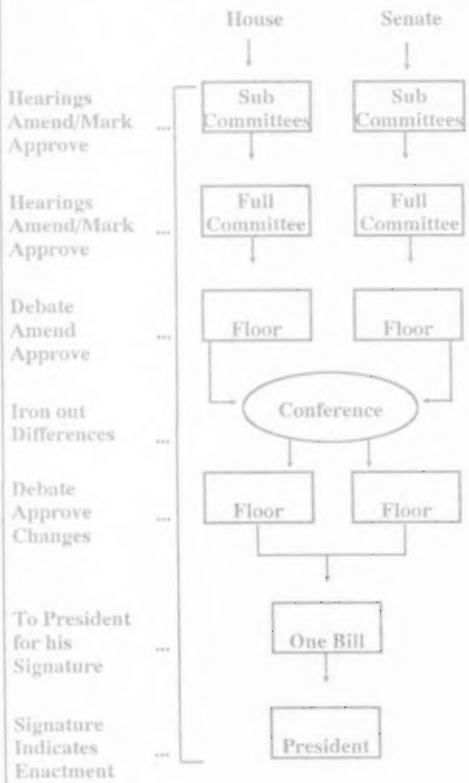
Defense bills have been vetoed by the president. In that case, the bill goes back to Congress until a compromise can be reached on the objectionable material. The goal is to have a new Defense Authorization and Appropriations Bill signed by the president before the new fiscal year begins on October 1. This has not happened recently. Without a new bill, a continuing resolution allows DOD to continue spending money using the previous year's ceiling (with no new program "starts").

Once the bills are signed, DOD must comply with congressional direction and intent. A report accompanies each bill, describing its purposes and scope. Although some debate usually occurs about the importance of report language, the Air Force generally complies with the language as indicative of congressional intent.

The new legislation may require new DOD and service directives and implementation procedures. Congress may have directed specific reporting requirements on some issues or new policies. It is DOD's responsibility to support the letter and the spirit of the law.

When the final DOD Authorization and Appropriations Bills are received, SGI prepares a synopsis of each bill, highlighting the health-related and personnel matters, for distribution to the field. SGI invites your comments and suggestions as we begin to craft next year's legislation — a process that begins soon after the legislative cycle is complete.

The Legislative Process for the Budget, Authorizations Bills



The process described above is quite idealized. Frequently, the phases are completed out of order. The House and Senate Appropriations Committees sometimes fund programs at less than the level authorized. They sometimes provide programs more than the authorized level of funding or include legislative provisions in the appropriations bill. The Authorization Committees sometimes authorize programs that are not funded by the Appropriation process.

It is with great sorrow that we announce to you the death of Mrs. Patti S. Turner, chief of legislative affairs in the office of the Air Force surgeon general. She died on Sunday, May 31, of injuries received in a traffic accident near her Virginia home.

A native of Staten Island, N.Y., Turner was a magna cum laude graduate of Hunter College. She had lived in the Washington, D.C., area since 1977, and received a master's degree in public relations from American University.

After more than five years as a writer and public information specialist with the Army, Turner began working for the Air Force in 1980, where she stayed for 12 years. Initially, she served with the directorate of medical inquiries and information as speechwriter for the surgeon general. Then she became principal advisor to the surgeon general and staff on legislative and public affairs matters.

Along with her many other valuable contributions and her well-known sense of humor, Turner's dedicated involvement in congressional medical issues and her influence with numerous Air Force/medical societies, associations and publications will be deeply missed.

A memorial service was held for Turner at St. Francis Episcopal Church in Great Falls, Va., on Thursday, June 4, 1992. She is survived by her husband, James, and two sons, Chris, 11 and Alex, 7.

Bicycle Ergometry: The New Air Force Fitness Test

Capt. James W. Pank, BSC

In October 1992, the Air Force will begin using the bicycle ergometer to measure aerobic fitness. Keeping the Air Force fit to "fly, fight and win" takes a serious commitment from the Medical Service and requires dedication and discipline on the part of each Air Force member. The bicycle ergometer provides a safe method of fitness testing, and the results of the evaluation will encourage members to improve their health life-styles year-round.

The Run

For more than 20 years, Air Force policy has required individuals to run one and a half miles or walk three miles in a set time to pass their aerobic fitness test. Problems have resulted from this method of testing. People who do not exercise on a regular basis expend most of their energy in the early phase of the run and go into "oxygen debt" before reaching the halfway point. They usually develop an intestinal cramp and have to walk for a few minutes. Then they must start running at maximum effort to successfully pass their aerobic test. The problem? Individuals can pass the test without actually being aerobically fit, and then they continue in their current, unhealthy life-style.

People who have jobs that keep them behind a desk for eight to 12 hours a day may not take time to exercise daily. They may get too involved with their work and fail to find time for keeping up their fitness activities. The problem here? These people, who only exercise once each year, become a medical risk during the run. They are at great risk for exercise-induced injuries and/or cardiovascular incidents.

Bicycle Ergometry: The Test

Under the redesigned Air Force fitness testing program, aerobic fitness will be measured on a bicycle ergometer. Before subjects begin riding the stationary bicycle, an individual trained to administer the test will record their gender, age, weight, height and level of fitness. Then a cordless heart monitor will be strapped to their chest. Their heart rate is entered on a computer that uses the rate to calculate their predicted maximum oxygen uptake. The subject will be directed to ride the bike at 50 revolutions per minute throughout the test, which usually lasts between six and 12 minutes. The

subject's heart rate will increase steadily with an increase in resistance and finally stabilize when the heart reaches its aerobic capacity, or its reserve range.

The results of the test will be compared to six different, predetermined categories. Category VI is the highest, and Category III is considered the standard, passing rate. Because the test will show true aerobic fitness, passing it will require more than a hurried preparation beforehand or a good, one-time performance. It will require participation in a continuous aerobic program at least three times a week for a duration of 20-30 minutes at a moderate intensity (60-80 percent of the maximum heart rate). Retest within 90 days can reveal the slightest bit of improvement over past performance. The results should become an incentive for maintaining a continuous healthy life-style.

Individuals who fall into Category I will be placed in a mandatory training program monitored by morale, welfare and recreation personnel at the fitness center. Individuals who test in Category II will begin a self-paced program. People in both programs may choose a variety of aerobic activities, such as a combination of swimming, treadmill or bike riding, to gradually increase their fitness level. While they are exercising, they will be retested every 90 days until they can pass by meeting Category III standards.

Bicycle Ergometry: The Theory

The bicycle ergometer will measure aerobic fitness quantitatively by estimating each person's maximum oxygen uptake (max VO_2), which is the maximum amount of oxygen that can be transported to the body tissues and muscles from the lungs. The predicted max VO_2 is calculated from different heart rates at different levels of resistance and from the steady-state heart rate at a final level of resistance. Fitness tests measuring max VO_2 must be of sufficient intensity and duration to engage the greatest possible aerobic energy transfer. Several types of exercise and equipment widely used to generate adequate energy transfer and to predict an individual's max VO_2 include treadmills (running and walking), bench stepping and bicycle ergometers.

Certain factors, unique to individuals, also directly influence their max VO_2 score. The subject's heredity, state of exercise, body composition, gender, age and medical condition must be taken into consideration. Studies conclude that heredity alone can account for up to 70 percent of the observed differences in aerobic capacity as measured by max VO_2. Some individuals will test well without pre-conditioning merely because of their inherited, innate abilities. Others, although they may work extremely hard, will never be able to perform at that same level. Individuals need to have realistic expectations of their own abilities based on heredity.

Capt. James W. Pank (left) performs a bicycle ergometry test at Beale AFB, Calif.

Male and female max VO_2 values differ substantially. This apparent gender difference has been ascribed to differences in body composition and hemoglobin content. Males are generally able to generate more total aerobic energy simply because of larger muscle mass and less body fat. Females usually score 15 to 30 percent lower than males when comparing relative body mass. Women also have a 10 to 14 percent lesser concentration of hemoglobin than men. Men who have a normal concentration of hemoglobin can circulate more oxygen during exercise, giving them an edge in aerobic capacity.

Age also affects the predicted max VO_2. After age 25, max VO_2 declines steadily about 1 percent per year; however, exercise helps counter the 1 percent decrease. Because of the effects of gender and age on predicted VO_2, the software used during bicycle ergometry testing automatically calculates adjustments into the scores.

Conclusion

Ideally, implementing the bicycle ergometry program should encourage Air Force members to make exercise a part of their daily routine. Habitual aerobic exercise has some wonderful benefits: decreased body fat and blood pressure, reduced stress levels, a stronger and more efficient heart, increased high density lipoprotein (better known as HDL) and even improved self-esteem. Exercise combined with good nutritional habits is the formula for achieving total physical fitness and for being able to confidently meet the physical and mental demands of every day.

Capt. James W. Pank is an exercise physiologist and the health promotion manager for the 9th Medical Group, Beale AFB, Calif.

A Salute to Wiesbaden

George M. Watson Jr., Ph.D

Soon the Air Force will say goodbye to Wiesbaden as we know it, the largest Air Force medical center outside the continental United States. Wiesbaden, with its rich and active past, is slated to cease active patient care and convert to a contingency hospital in October 1993. On many occasions during the past decades, Wiesbaden has served as a focal point of international news, opening its doors to victims of such crises as the Beirut Marine barracks bombing and many Middle Eastern hostage incidents. As the United States pulls out of Europe and closes many institutions and facilities that provided troop support, the Air Force pays tribute to Wiesbaden, one of its great medical centers.

Development of the Hospital under German Control

In the 1930s, the expanding German war machine crept to an inevitable clash with Britain and France by continuing to usurp portions of weaker European nations and establish hegemony over others. German military planners recognized the need for additional medical facilities because of expected fighting, and in 1938, the German Wehrmacht began constructing a 250-bed hospital, plus a 50-bed psychiatric facility, for the troops in the Wiesbaden area.

Amazingly, the largest portion of the structural work, excluding floor coverings and painting, was completed within a year. In fact, a ceremony on Jan. 29, 1939, celebrated the completion of the major buildings. When Nazi Germany attacked Poland in September 1939, Britain and France declared war on Germany. As a result of the war, critical building materials, such as iron, steel, wood, cement and asphalt, became scarce in late 1939 and 1940, prolonging the completion of the hospital.

Although the facility was not officially finished until 1942, it began accepting patients as early as February 1941. More than 100 French prisoners from the Blitzkrieg campaign of June 1940 were sequestered from a local prisoner of war camp to work on the hospital (1). Soon after becoming operational, the hospital felt the effects of war once again. Medical equipment was often taken from the hospital for more needy medical facilities, perhaps those at the front. Also, bed capacity was increased by simply doubling the number of beds per room. Bed capacity eventually reached 1,800 by using some of the outlying buildings on the compound.

Increased allied bombing, although not directed against the hospital, created a problem for the staff. Providing adequate care under the tumultuous nature of air raids proved a real challenge. Adequate shelters had been constructed in the basement of the main building, but moving patients down three floors each time the siren beckoned ominously proved a formidable task. In 1944, the hospital resolved the issue by shifting all the patients to the cellar. Fortunately, allied bombers made no direct hits on any buildings in the hospital complex throughout the entire war (1).

Expansion of the Hospital under American Control

By March 1945, the Nazi regime and its armies were being attacked on both east and west by the allies. It was only a matter of time before Hitler's tyrannical reign breathed its last. On March 28, 1945, a 10-man American patrol occupied the hospital gate house, and the group was soon reinforced by other officers and men. Soon, a 36-man military police unit was quartered in one of the buildings and then, with control fully established

When the 7100 CSW Medical Center, Wiesbaden, Germany, converts to a contingency hospital in October 1993, active patient care, such as this routine dental procedure, will be discontinued.

A member of MAC's 2nd Aeromedical Evacuation Squadron speaks with one of 25 Afghan civilians transported to the 7100 CSW Medical Center, Weisbaden, Germany, May 9-11, 1986, to receive specialized treatment for war-related injuries.

by the U.S. Army, efforts were made to evacuate German patients to other hospitals. This was accomplished by the end of May 1945 (1).

On June 7, 1945, members of the 317th Station Hospital staffed the Wiesbaden hospital, and just 13 days later, the first American patients arrived. Wiesbaden remained the 317th Station Hospital until it was reassigned to the U.S. Air Forces in Europe (USAFE) in January 1948 and redesignated the 495th Medical Group. On Oct. 14, 1953, the hospital received the name of the 7100th USAF Hospital, and on July 1, 1958, the unit designation was dropped and it became known as the USAF Hospital Wiesbaden. The hospital became a regional medical center in December 1982, and in September 1988, it was redesignated the 7100th Combat Support Wing (CSW) Medical Center.

Following the war, the United States began to shoulder the major responsibility for NATO, which resulted in the simultaneous growth of U.S. forces. As the forces grew, so did the Wiesbaden complex because U.S. Air Force members and their families needed services, including medical care. In 1947, an auditorium and dining hall were added to the complex. New dormitories were built in 1953, and an outpatient clinic was added in 1957.

Over the years, many improvements were made to the buildings in addition to the normal replacement and updating of equipment. Eventually, the complex included 27 buildings on 18 acres, with a 50-bed aeromedical staging facility and a 36-chair dental clinic. The authorized total for beds was 185 (2).

Development of the Hospital's Mission

In the late 1940s and early 1950s, Wiesbaden furnished medical aid and hospitalization for U.S. military and civilian personnel and U.S. military dependents of the Wiesbaden Military Post, and performed duties as directed by the chief surgeon. The hospital also treated patients from the entire U.S. European Command (EUCOM) for various illnesses, such as neuropsychiatric diseases. Former Air Force surgeon general Robert A. Patterson affirms this. Patterson, commander of the 7600th USAF Hospital in Madrid, Spain, in the early 1950s, said that his facility was unequipped to take care of some serious cases and often flew patients to the larger facility at Wiesbaden (3).

By 1990, the mission of the hospital had expanded considerably to provide medical readiness and operational support through quality health care services; to supply consultant services and other special programs and operations in support of USAFE, EUCOM, DOD and other government agencies; to furnish special humanitarian services; and to maintain special medical readiness capabilities.

The area supported by the 7100th CSW Medical Center extended beyond Europe and USAFE to Africa and the Middle East. The center's location near Rhein Main AB, the airlift and aeromedical evacuation focal point of Europe, made it a key player in any U.S. medical response to contingencies in that part of the world. In 1990, the center's staff included 236 officers, 475 en-

Above: Joseph Cicippio, kidnapped from Lebanon in 1986, is welcomed at Wiesbaden in late 1991. Left: After more than six years as a hostage, Terry Anderson arrives at Wiesbaden. Right: Thomas Sutherland shakes hands with Capt. Daniel Moore, charge nurse.

listed and 190 civilians. On the average, the staff attend 170 inpatients and 780 outpatients per day, and deliver approximately 100 babies every month. The Wiesbaden Regional Medical Center, as it is commonly known, also provides primary dental care for service members throughout Europe (1).

Notable Events

Perhaps the most famous event that the medical center supported was the return of 52 hostages captured in the takeover of the American Embassy in Iran. For 14 months, from Nov. 11, 1979, through Jan. 25, 1981, worldwide interest was focused on the hospital as it prepared for the reception of hostages. This mission required unique preparations under difficult conditions. Indeed, the operation called for the immediate care of up to 75 inpatients with a broad spectrum of diseases, with as little as six to 12 hours' notice.

Because any patient movement within the hospital would suggest to the ever-present press that a release of the hostages was imminent, activity within the hospital had to be balanced against the possibilities of upsetting the delicate negotiations for the release of hostages. While these events were taking place, the hospital continued providing patient care to military and civilian government employees throughout Europe, including Greece, Italy and Turkey, with no degradation of care (4).

When the release of the 52 hostages became imminent, seven press vehicles with remote-controlled television equipment stayed on the edge of the hospital compound for five months. Crews of up to 100 were in daily attendance, each person seeking a human interest story. After the liberation, more than 800 press members were on the hospital compound attempting to capture and record the significant event for history.

When 52 patients arrived from Teheran, Iran, on Jan. 21, 1981, they were assigned to various wards in the hospital or discharged. None of the patients already in the hospital were transferred to other facilities, and basic

The 52 hostages released from Iran received a warm welcome and many cheers as they arrived at Wiesbaden on Jan. 21, 1981. They stayed at the hospital for a few days before leaving for the United States.

services were maintained. The 52 former hostages spent five days recovering at the Wiesbaden complex before continuing to the United States (5). They named the third floor of the west wing, where they stayed, Freedom Hall, and later presented a plaque that hangs in the hall. Freedom Hall has also seen 12 of the 13 American hostages released from Lebanon. The last six hostages were released between August and December 1991.

The most tragic event to involve the hospital was the October 1984 bombing of the Marine barracks in Beirut, Lebanon. Thirty-six wounded Marines were transferred to the Wiesbaden center for treatment. The staff was also involved in identifying the remains of the 246 Marines killed in the blast. Then secretary of state George Schultz lauded the work of the center, stating that "There are not enough superlatives to describe the support provided by the Air Force's 7100th CSW and Regional Medical Center." (5)

The hospital also treated 1,200 refugees from the Afghanistan War, through more than 100 flights. Every two months, starting in 1985, a planeload of men, women and children was flown to the Wiesbaden hospital for treatment of war-related injuries. From May to August 1986, the center supported medical rescue and other efforts at the Chernobyl disaster in the Soviet Union. The center's bioenvironmental lab analyzed soil and other samples for radioactivity, and biophysicists provided technical assistance to the Soviets.

In addition, the medical center's flying ambulance surgical trauma team, or FAST team, has the capability to establish surgical facilities within minutes of arriving at their destination. This team deployed to Ethiopia in August 1989 to provide medical backing for the search effort for congressman Mickey Leland, whose plane was lost.

The 7100th CSW also provided medical support for Operation Desert Shield/Storm. During that operation, in addition to providing services to all eligible beneficiaries, the medical center had 500 beds ready and had the capability to set up 250 more if needed. They treated 3,000 Desert Shield/Storm patients, about one-third of all patients evacuated from the Middle East. The center continues to provide many types of medical expertise to assist in crises and humanitarian missions (5).

Conclusion

Wiesbaden has played an important part in the history of the Air Force Medical Service, and its closing will be a definite loss. However, now that the Russian threat to central Europe has receded with the reunion of East and West Germany and the dissolution of the Warsaw Pact, American forces are phasing out of the area. These events, coupled with DOD reorganization efforts, mean Wiesbaden must soon take its place in military medical history.

Wiesbaden's flying ambulance surgical trauma (FAST) team responds immediately to casualties worldwide .

When this article was written, George M. Watson Jr., Ph.D., was chief historian, Office of the Air Force Surgeon General, Bolling AFB, D.C. He is now chief of the Air Staff branch at the center for Air Force history, Pentagon, Washington, D.C.

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Staff members at Wiesbaden regularly participate in mass casualty exercises, honing their skills to deal with serious catastrophies on short notice.

The *Digest* Interviews

Maj. Gen. (Dr.) Donald J. Butz

The *Digest* interviewed Maj. Gen. (Dr.) Donald J. Butz, assistant surgeon general for dental services, on June 30, 1992 — just one day before the dental service celebrated its 43rd anniversary as a part of the Air Force Medical Service. Butz takes a comprehensive look at the dental service by discussing current issues, evaluating participation in Desert Shield/Storm and addressing a future with decreased manpower requirements.

Digest: What is the greatest challenge facing the Air Force dental service today?

General Butz: These are tremendously exciting times, not only for the dental service, but for the entire spectrum of health professions. As a group, we face challenges that we have never faced before: an ever-expanding requirement for services, what seems to be a continuing explosion in technological advances and a vastly broadening area of responsibility. In addition to these, we share escalating restraints and constraints in infection control, Occupational Safety and Health Administration (OSHA) standards, medical waste disposal, availability of medical personnel and new health care delivery concepts. We are concerned about what our total resources are going to be in the future, and we need to remain competitive to get the right number of qualified people in the right positions.

Basically, our dental service problem today is access, or meeting ever-increasing patient demands for sophisticated, complicated and exacting treatment procedures in spite of steadily diminishing resources. We believe that our patient population deserves this treatment. We are also challenged by a complex dental care environment and a multitude of factors influencing our capability to deliver care: manpower, personnel, budget, facilities, equipment and materials. These challenges spur us on to improve our dental care delivery system. I believe our greatest challenge now and for the future is continuing to give our patients outstanding care while introducing innovative treatment programs and new health care delivery techniques, taking into consideration today's dental disease treatment requirements and patient demographics.

Digest: What are some important issues facing the dental service now?

General Butz: Dentistry has received more attention within the last year than it probably ever has because of a new public awareness of oral health. I am referring to the unfolding story of HIV-infected health providers and patients; publicity on the affects of mercury-containing restorative materials; the relationship between infection control and dental handpieces; a focus on the risks and benefits of fluoride; and the recent hearings on implants. We have taken advantage of this publicity and have provided additional, accurate information on these and other relevant topics to our patients.

These issues are having an impact on the way that we deliver dental health care, and many are going to increase delivery costs. Because some attention has been given to the possible transmission of infection through dental handpieces, within the last year or so we have increased the number of dental handpieces available to each one of our providers, which was rather expensive. We have used universal barrier techniques and precautions in our infection control program all along, and we have recently updated our dental service policy on infection control protocols and have provided guidance for implementing the recent OSHA standards. The new standards for occupational exposure to bloodborne pathogens also include saliva as a potentially infectious material. Concerns about the aerosol or splatter of either

saliva or blood have led to the need for personal protective gear, which is another expense. We will meet these infection control requirements without overburdening our people.

Of course, we continue to ensure the best use of our dental specialties. In view of the future downsizing, we have initiated a review of the dental specialties and of staffing throughout the dental service. This will help us determine specialty mixes that may require adjustments.

Another area that will be receiving attention is a Tri-Service study of dental treatment needs. Past independent studies could not provide an accurate assessment of DOD-wide needs because they were not standardized. Tri-Service parameters and protocol have been approved, and the study should be conducted during the upcoming year.

We also remain concerned about the limited availability of dental care to active duty family members, retirees and their families. We have had a good, basic dental insurance program for our active duty family members since 1987, and are pursuing increased policy benefits. We have investigated the possibility of a dental insurance program for our retirees, and will continue to support this effort.

Digest: Would you discuss the role(s) of dentists in Operation Desert Shield/Storm and any lessons learned that will impact their future wartime role?

General Butz: Our primary dental wartime mission is to sustain dental health care. Secondary to that, we also have the ability to augment other areas, such as minor surgical teams or the casualty collection points for triage. We continually update these capabilities in our dental officer and enlisted readiness training programs, which was evidenced by the integral part we played in the Medical Service mission during Desert Shield/Storm. We provided quality dental care at all echelons, but we also had numerous dental people assigned to other responsibilities. For example, we initially had one oral/maxillofacial surgeon who went to the Middle East primarily for his capability in administering anesthesia.

Although our dental folks were among the busiest in the health care area during the operation, it was evident that we had been meeting the dental needs of our active duty members all along. Our deployed men and women were in excellent dental health as a result of our ongoing Periodic Dental Examination Program and our sustained guidance on the priority of care for fliers and mobility personnel. We treated unexpected tooth flare-ups and problems from injury. It is my understanding that we did a good bit of work with the Royal Air Force, and they thought that it was great to have the dental care available to them. There was also some concern, even though our data is mostly anecdotal, that many of the activated reserve components had some significant dental problems. Most of those problems, however, were treated before they deployed.

Digest: How has the role of the dental service changed over the years?

General Butz: Since July 1, 1949, when our Air Force dental service became an integral part of the Air Force Medical Service, we have seen the dental service broaden its scope from a very limited specialty capability to its present enviable professional stature. As the complexion of dentistry has changed over the past four decades so has the character of Air Force dentistry. Today, our practice reflects national changes in dental education and practice, and I am proud to say that we have not only kept pace with the changes, but we have been leaders in dentistry. We have residency programs that are recognized as premier programs throughout the nation — the quality of our education programs and of the people in our residency training programs makes us a national resource.

Digest: What is the status of recruiting and retention in the dental service?

General Butz: We are doing all right, but we have seen some negative trends develop over the past five or six years that reflect what is happening in dentistry across the nation. About 10 years ago there was a glut of dentists, but that is no longer the case. In fact, a number of civilian dental schools have closed over the last two years. Since 1982, the number of graduates has decreased by about 26 percent, and there has been a 37 percent decline in first-year spaces.

Historically, we have done very well in recruiting because recent graduates wanted to enter the Air Force or the military for at least a three-year tour to gain experience and speed in their practice. We are seeing a decline in that interest and a trend toward going into dental specialty training directly after graduation. The American Dental Association (ADA) and the American

Association of Dental Schools have done surveys indicating that interest in entering one of the military services, even for a three-year initial tour, is at a low point. A 1990 ADA survey showed that only 11.6 percent of graduating dental students considered military service, compared to 19.7 percent in 1978. We are starting to see that in our numbers.

Even though our requirements are going down, we are not seeing enough, in fact we are seeing fewer and fewer, applicants for our recruiting objectives. Even with the decline, however, we do not intend to compromise our standards in order to fill our requirements. This year we had only 64 applicants for our 46 general practice residency spaces, and because some of the applicants were not fully qualified, we will still come up short. To help attract qualified applicants, we have had quotas reinstated for the Health Professions Scholarship Program for the first time since 1977. Since 1987, retention of our dental officers beyond completion of their initial obligation has also steadily decreased. These are all indicators that we must strengthen our efforts to remain competitive.

One of our concerns as we come down in our requirements is that we do so in manageable increments and maintain a viable accession program. It appears that our numbers are going to come down to about 1,200 blue-suit dental officer authorizations in 1995 and 1996. We are comfortable with that and are confident that we will still be able to provide quality and comprehensive care with those numbers.

Digest: Do you have a personal message for members of the dental service?

General Butz: The future scope of dental programs is clearly unlimited, the challenges intriguing. We have an unprecedented opportunity to increase the flexibility of our dental care delivery. Also, the chance to improve our treatment programs and the need to improve our awareness of health care issues have never been greater and represent obvious challenges. I am proud of the dental delivery team — the officers, enlisted and civilian support staffs that we have. I encourage them to continue studying and keeping current, working to make our service better. They do that very well.

Digest: Thank you, General Butz.

Deciphering Genetic Codes

The USAF Medical Genetics Center at Keesler Helps Patients Answer Complex Questions

Col. David T. Rigdon, MC

The USAF Medical Genetics Center at Keesler AFB, Miss., answers questions every day that would mystify the average person. Patients seeking genetic advice are referred to the center from Air Force, Army and Navy medical facilities. The center, which opened in 1980, receives telephone consultations from around the world and accepts laboratory specimens from a number of hospitals. The studies done by the staff at the center give patients a better understanding of the genetic facts surrounding their particular cases and, most often, offer reassuring information.

Services and Staff at the Center

Patients come to the USAF Medical Genetics Center for genetic evaluation, disease diagnosis, professional counseling and care. The clinic's specialties include: dysmorphology, the evaluation and diagnosis of birth defects; clinical cytogenetics, the study of the relationship between chromosomal abnormalities and clinical disease; biochemical genetics, the study of inborn errors of metabolism; and prenatal diagnosis, the identification and management of birth defects and genetic disorders before birth.

Molecular genetics, the study and detection of DNA abnormalities in genetic disorders, was recently added to the clinic's list of services. The ability to either a) trace an abnormal gene through a family or to b) detect the actual DNA abnormality associated with a specific disease, now allows identification of patients who may be carriers of certain genetic disorders. For example, when appropriate, patients may be screened with a battery of tests to determine whether they carry the gene for cystic fibrosis. Such testing also detects carriers of a number of other disorders. The information may be used to

determine the risk of having an affected child or of eventually becoming affected. Similar techniques allow an increasing number of disorders to be detected prenatally.

The professional staff at the center includes three physician geneticists, a nurse practitioner/genetic associate and a laboratory officer with a doctoral degree in cytogenetics. Two physicians have a pediatric background, and one has an obstetric-gynecologic background. Board certifications include clinical genetics, clinical cytogenetics and biochemical/molecular genetics. The technical laboratory staff includes four senior cytogenetic technologists and a senior medical technologist. The cytogenetic technologists perform the actual analysis of human chromosomes, and the medical technologist supports the biochemical and molecular section of the laboratory.

The complex process of cytogenetic analysis, which may take several weeks, involves culturing cells from a variety of tissue sources such as blood, skin, bone marrow, amniotic fluid and placental tissue. Cultured cells are evaluated and counted under a microscope, and photographs are made of the chromosome content of multiple cells. The cytogenetist provides the final interpretation. The biochemical/molecular section of the lab performs plasma amino acid and urinary organic analysis as well as linkage analysis and/or direct detection of DNA mutations for certain disorders.

Reasons for Genetic Concern

Patients are referred to medical genetics for many different reasons: a family history of Huntington's disease, cystic fibrosis, malformations or congenital heart defects; a previous child with Downs syndrome; positive carrier screening for Tay-Sachs disease; and exposure to radiation or medications during pregnancy. Regardless of the reason that brings patients to the clinic, their ultimate concerns are always the same. How likely is it that the patient will eventually become affected with a hereditary disorder? How likely is it that the patient's children will be affected? What sort of treatment, prevention or prenatal diagnostic options are available?

To address these concerns, geneticists at Keesler attempt to answer three main questions of their own. What is the specific disorder in question (diagnosis)? What can be expected of the affected person (prognosis)? And finally, how likely is the disorder to recur in the family? If the answer to the first question is unknown, the other questions cannot be adequately answered. In the case of common, well-known disorders such as Tay-Sachs disease or Downs syndrome, the typical clinical course of the disorder allows geneticists to provide accurate prognosis, and the genetic risks can be addressed. However, all too often, the affected person is no longer living, and no medical records are available. When this is the case, diagnosis may never be clear.

The frustration of unclear diagnosis can be best described by the example of a typical patient seen at the center; we will call her Anne. Anne was 22 years old and early in her first pregnancy when she came to the center. She had only recently become aware that her husband had a sister who was multiply malformed and died at birth. No medical records were available. Although the family was reluctant to discuss the traumatic episode in their lives, Anne and her husband were told that the baby had a cleft lip, malformed hands with extra fingers and was felt to have had a heart defect (no autopsy was performed). No other information was available. Anne was referred to the center for genetic amniocentesis.

Chris Williams, technologist at the USAF Medical Genetics Center, Keesler AFB, Miss., prepares a karyotype — a representation of a patient's chromosomal pattern.

Explanation of Possible Disorders

Anne, in the example above, learned that there were many possible causes of the defects in her husband's sister because disorders may be inherited in various patterns and may be caused by different factors. First, disorders of the autosomal dominant pattern are usually transmitted from parent to child with no "skips" in generations. Since neither of the parents of the deceased child were affected, it was unlikely that she had suffered from an autosomal dominant disorder. Although it is possible, and indeed not uncommon, for

Top Right: Technologist Gayle Bowman prepares to grow cells in a culture. Cells to be cultured are taken from a variety of tissue sources. Bottom Right: When enough cells are grown to the proper stage, their chromosomal pattern will be examined under a microscope as Bowman and technologist Rosemary Cheek are doing here.

an autosomal dominant disorder to occur unexpectedly as the result of a sporadic gene mutation, such mutations would probably not happen again. Therefore, the risk of similar problems occurring in other family members, such as Anne's child, would be small.

In autosomal recessive disorders, both parents must carry the gene and transmit it to a child for the child to be affected. When both parents carry the gene, there is a 25 percent chance that any child will be affected. If the affected child in this illustration had an autosomal recessive disorder, Anne's husband would have a chance of carrying the gene. However, the couple would be at risk of having a similarly affected child only if Anne also carried the gene. Although this would not be impossible, since everyone carries a number of abnormal recessive genes, it would be unlikely.

X-linked recessive disorders are typically carried by unaffected females and occur almost exclusively in males. Affected males in a family are related to each other through unaffected females. Since it is unlikely that a female, Anne, with an unaffected father would herself carry an affected gene, the X-linked recessive disorder pattern did not apply to this case.

Most likely, given the physical findings, the affected child who died at birth had a chromosomal disorder. Most chromosomal disorders occur sporadically. There is a 1-2 percent empiric risk that a sibling of a chromosomally abnormal child will also have a chromosomal anomaly.

The only exception is when an unbalanced chromosomal pattern arises from a balanced translocation in the family. In a balanced translocation, two chromosomes have exchanged material; part of number one may be attached to a number two and part of the number two attached to number one. All the necessary material is present and functions normally, but it is rearrangeed. Carriers of a balanced rearrangement are clinically normal, but they may be at an increased risk of having children with an unbalanced pattern, which would lead to physical defects and mental retardation. The possiblity that Anne's husband carried a balanced translocation was addressed by chromosomal studies, which were normal. He did not carry a translocation that would suggest a significant risk of chromosomally abnormal offspring.

Multifactorial disorders occur from an interaction between both genetic and other, as yet unidentified, factors. The recurrence risks for first-degree relatives (siblings or offspring) of an affected person is generally 2-4 percent. This risk declines with increasing remoteness of relationship to the affected person. Multifactorial disorders are usually isolated structural defects in an otherwise normal person. Common examples are the isolated cleft lip, isolated congenital heart defects and isolated neural tube defects. Syndromes with multi-organ system involvement are rarely inherited in this manner, and so it seemed an unlikely possibility in Anne's case.

Birth defects can also be caused by non-inherited factors. Exposure during pregnancy to certain teratogenic agents, such as some infections, drugs or medications, can cause defects that are not hereditary. The recurrence risk of the defect is very small when exposure to the offending agent does not recur. Anne's in-laws offered no history to suggest a teratogenic etiology.

Finally, many defects are simply sporadic, not apparently hereditary and not apparently caused by any particular agent or event. The recurrence risk for sporadic problems, while not zero, is small. Determining recurrence risks for Anne and her husband was somewhat difficult because a specific diagnosis could not be found; however the risk to their children appeared to be small.

Methods of Detecting Some Defects

Although Anne did not need genetic amniocentesis, it is routinely used to detect chromosomal anomalies and open defects, such as spina bifida. Genetic amniocentesis can also be used to detect other disorders when those disorders are detectable through either biochemical analysis of amniotic fluid/cells, linkage analysis or direct detection of abnormal DNA sequences. To receive genetic amniocentesis, the patient must be at known risk for a specific disorder detectable by one of the above methods.

Some of the physical defects reported in the affected child in Anne's case, however, were potentially detectable in Anne's pregnancy by level II ultrasound. This safe, non-invasive procedure was done. There did not appear to be any facial clefting, and there appeared to be only five digits on each hand. The heart demonstrated four clear chambers with normal anatomy. Fetal echocardiography could have been done had the risk of a congenital heart defect appeared to be significant. The limitations of ultrasonography were clearly explained to the couple, but the results were encouraging. Eventually, Anne delivered a healthy son.

Conclusion

The staff at the USAF Medical Genetics Center understands that genetic counseling patients are anxious, uncertain of what to expect and want answers to their concerns as soon as possible. The staff's goal is to help patients feel at ease and unthreatened. Full explanations of every test are given to help the patient understand the reasons for them, the information they can provide and their limitations. Fortunately, the outcome in most cases is good; the risks are frequently not as great as the patients anticipate, and the information they receive is usually reassuring. The center is proud to serve military families with its research, helping people understand the complex issues of genetics.

Col. David T. Rigdon is the director of the USAF Medical Genetics Center, Keesler AFB, Miss.

Professional Board Certifications

Aerospace Medical Association
Capt. Darrell W. Criswell, Air Force Institute of Pathology, Washington, D.C.
Maj. Susan E. Richardson, 323rd Medical Squadron, Mather AFB, Calif.
Col. Robert E. Sherman, 9th Medical Group, Beale AFB, Calif.
Capt. Bruce A. Wright, AFSC Hospital Edwards, Edwards AFB, Calif.

American Board of Medical Management
Col. Andrew J. Breuder, 97th Strategic Hospital, Eaker AFB, Ark.

American Board of Occupational Health Nurses
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American Board of Physical Therapy Specialties

Maj. Alan M. Lafky, 22nd Medical Group, March AFB, Calif.
Maj. Franklin W. Lovell, 36th Medical Group, Bitburg AB, Germany
Maj. Michael L. Nored, Air University Regional Hospital, Maxwell AFB, Ala.
Maj. Beryl A. Smith, 48th Medical Group, Lakenheath AB, England

American Board of Preventive Medicine

Lt. Col. Hans E. Arvidson, 2nd Medical Group, Barksdale AFB, La.
Maj. G. Vaden Blackwood, Wilford Hall USAF Medical Center, Lackland AFB, Texas
Lt. Col. Michael Farrell, USAF School of Aerospace Medicine, Brooks AFB, Texas
Maj. David E. Hrncir, 81st Tactical Fighter Wing Clinic, RAF Bentwaters, England
Col. John G. Jernigan, USAF Medical Center Scott, Scott AFB, Ill.

Maj. James R. Knowles, USAF School of Aerospace Medicine, Brooks AFB, Texas
Lt. Col. James L. Laub, 800th Strategic Hospital, Whiteman AFB, Mo.
Maj. Emmet P. Murphy, 49th Medical Group, Holloman AFB, N.M.
Maj. Mary Ann T. Orzech, 347th Medical Group, Moody AFB, Ga.
Lt. Col. Monique A. Ryser, Ehrling Bergquist Strategic Hospital, Offutt AFB, Neb.
Lt. Col. Courtney D. Scott Jr., 317th Medical Group, Pope AFB, N.C.
Maj. Teresa J. Sommese, 354th Medical Group, Myrtle Beach AFB, S.C.
Maj. Andrew Tong, USAF Medical Center Wright-Patterson, Wright-Patterson AFB, Ohio
Maj. Daniel L. Van Syoc, USAF Hospital Robins, Robins AFB, Ga.
Maj. Robert D. Verdone, 343rd Medical Group, Eielson AFB, Alaska
Maj. Howard D. Wilcox, 8th Medical Group, Kunsan AB, Korea
Col. Benton P. Zwart, USAF School of Aerospace Medicine, Brooks AFB, Texas

American Board of Surgery

Maj. Harry L. Reynolds Jr., 384th Medical Group, McConnell AFB, Kan.

American College of Healthcare Executives

Capt. Jane T. Finneseth, 86th Medical Group, Ramstein AB, Germany

American College of Veterinary Preventive Medicine

Col. George E. Adams, USAF Hospital Robins, Robins AFB, Ga.
Lt. Col. Dennis A. Bekaert, Robert L. Thompson Strategic Hospital, Carswell AFB, Texas
Lt. Col. Michael J. Bradley, 18th Medical Group, Kadena AB, Japan
Col. Samuel L. Brock, 15th Medical Group, Hickam AB, Hawaii
Lt. Col. Theresa M. Casey, USAF School of Aerospace Medicine, Brooks AFB, Texas
Maj. Robin L. Cherry, USAF School of Aerospace Medicine, Brooks AFB, Texas
Lt. Col. Kenneth A. Costa, Ehrling Bergquist Strategic Hospital, Offutt AFB, Neb.
Lt. Col. Leo Cropper, Human Systems Division, Brooks AFB, Texas
Lt. Col. Harvey R. Crowder, USAF Clinic McClellan, McClellan AFB, Calif.
Col. James E. Dale, USAF Clinic Kelly, Kelly AFB, Texas
Col. Jerry W. Davis, Office of the Air Force Surgeon General, Bolling AFB, D.C.
Lt. Col. Paul B. Dungan, USAF Hospital Tinker, Tinker AFB, Okla.
Lt. Col. Vicky L. Fogelman, 86th Medical Group, Ramstein AB, Germany
Maj. Gary D. Gackstetter, Wilford Hall USAF Medical Center, Lackland AFB, Texas
Maj. Robert A. George, 542nd Medical Squadron, Kirtland AFB, N.M.
Capt. Kevin Grayson, Air Force Institute of Technology, Wright-Patterson AFB, Ohio
Col. Steve G. Grube, 1st Medical Group, Langley AFB, Va.
Col. Thomas D. Heading, Keesler Technical Training Center, Keesler AFB, Miss.
Col. John R. Herbold, Armstrong Laboratory, Brooks AFB, Texas
Lt. Col. James F. Howell, Fort Lee, Va.
Col. George W. Irving III, Human Systems Division, Brooks AFB, Texas
Lt. Col. Erwin D. Jemelka, 836th Medical Group, Davis-Monthan AFB, Ariz.
Lt. Col. Roger A. Krogwold, 542nd Medical Squadron, Kirtland AFB, N.M.
Col. Marion W. Leftwich Jr., USAF Medical Center Scott, Scott AFB, Ill.
Col. William O. May Jr., USAF School of Aerospace Medicine, Brooks AFB, Texas
Lt. Col. Marvin D. Meinders, Office of the Air Force Surgeon General, Bolling AFB, D.C.
Col. Judson C. Miner Jr., Armstrong Laboratory, Brooks AFB, Texas
Col. William F. Mohri, Office of Air Training Command Surgeon, Randolph AFB, Texas
Lt. Col. Ernest H. Oertli III, Armstrong Laboratory, Brooks AFB, Texas
Col. James Peguesse, 63rd Medical Group, Norton AFB, Calif.
Col. Michael R. Peterson, Office of the Assistant Secretary of Defense, Pentagon, Washington, D.C.
Col. Larry Schaed, USAF Academy Hospital, USAF Academy, Colo.
Col. Richard L. Shafer, Office of the Air Force Surgeon General, Bolling AFB, D.C.
Lt. Col. Dennis R. Skalka, Wilford Hall USAF Medical Center, Lackland AFB, Texas
Maj. Thomas M. Stedman Jr., 363rd Medical Group, Shaw AFB, S.C.

Col. Mark A. Stokes, Armstrong Laboratory, Brooks AFB, Texas
Col. Michael A. Wansky, David Grant USAF Medical Center, Travis AFB, Calif.
Col. Ronald D. Warner, Armstrong Laboratory, Brooks AFB, Texas
Maj. Russel Wilbur, 319th Medical Group, Grand Forks AFB, N.D.
Lt. Col. Robert L. Williams, Office of the Air Force Surgeon General, Bolling AFB, D.C.
Col. James H. Wright, 3750th Medical Group, Sheppard AFB, Texas

American Nurses Association

Maj. Debra L. Bays, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Maj. Lori A. Boyle, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Capt. Margaret A. Brown, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Maj. Joseph P. Cardona Jr., AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Capt. Daniel Clayton, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Maj. Keith E. Gardner, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Maj. Karla K. Herres, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Capt. Robie V. Hughes, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Capt. Susan D. Klug, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Capt. Richard T. Melchior, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Lt. Col. Jacqueline E. Murdock, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Maj. Tracy A. Price, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Maj. Jean A. Reinert, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Maj. Janet C. Risberg, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Maj. Frederick D. C. Rye, AFSC Regional Hospital Eglin, Eglin AFB, Fla.
Lt. Col. Martha Turner, AFSC Regional Hospital Eglin, Eglin AFB, Fla.

American Registry of Professional Entomologists

Capt. Terry L. Carpenter, HQ USAFE, Ramstein AB, Germany

Federal Services Board of General Dentistry

Lt. Col. Gardner G. Bassett, 416th Medical Group, Griffiss AFB, N.Y.
Lt. Col. Jeanne H. Hansen Bayless, 49th Medical Group, Holloman AFB, N.M.
Maj. Scott G. Bergh, USAF Medical Center Scott, Scott AFB, Ill.
Lt. Col. Harvey P. Borarsky, AFSC Hospital Edwards, Edwards AFB, Calif.
Maj. Andrew R. Kious, USAF Hospital Robins, Robins AFB, Ga.
Maj. Kelvin K. Krause, AFSC Clinic Hanscom, Hanscom AFB, Mass.
Maj. Maureen E. Lang, David Grant USAF Medical Center, Travis AFB, Calif.
Lt. Col. David P. Mjos, 65th Medical Group, Lajes AB, Spain
Maj. Kevin M. Noall, 347th Medical Group, Moody AFB, Ga.
Lt. Col. Glenda E. S. Nuckols, 50th Tactical Fighter Wing Hospital, Hahn AB, Germany
Lt. Col. Stephen W. Owen, USAF Hospital Tinker, Tinker AFB, Okla.
Lt. Col. Ralph L. Pruett Jr., 2nd Medical Group, Barksdale AFB, La.
Lt. Col. Stephen Schmidt, Ehrling Bergquist Strategic Hospital, Offutt AFB, Neb.
Maj. Jay C. Smith, 7100th Combat Support Wing Hospital, Wiesbaden, Germany
Lt. Col. Edward C. Staley, 314th Medical Group, Little Rock AFB, Ark.
Lt. Col. Faith A. Thomas, 3750th Medical Group, Sheppard AFB, Texas
Lt. Col. Michael D. Zollars, 56th Medical Group, MacDill AFB, Fla.

National Certification Board of Pediatric Nurse Practitioners and Nurses

Maj. Julie L. Penton, Chanute Training Center Hospital, Chanute AFB, Ill.
Maj. Cathy L. Thompson, 416th Medical Group, Griffiss AFB, N.Y.

National Certification Corporation of the Organization for Obstetric, Gynecologic and Neonatal Nurses

Maj. Barbara A. Nedervelt, 379th Medical Group, Wurtsmith AFB, Mich.

Outstanding Airman Advances the Air Force Medical Mission

SSgt. Dean P. Handy was selected to represent his unit at the National Victory Parade in Washington, D.C.

SSgt. Dean P. Handy earned his spot among the select 12 Outstanding Airmen of 1992 as a Reservist assigned to the 37th Aeromedical Evacuation Group at MacDill AFB, Fla. When the Air Force Association applied its criteria of "unique, unusual or outstanding individual involvement and achievement within the preceding 12 months" to the 84 nominees, Handy certainly fit the bill.

For instance, when he was offered the chance for a "short sabbatical in an exotic, Near East country" in August 1990, Handy jumped at it. He spent the next seven months in Saudi Arabia during Operation Desert Shield/Storm, relentlessly training Air Force and Army troops on the ins and outs of aeromedical evacuation. He also put his skills as a communications systems radio operator to work by shortening radio transmissions from 28 to eight seconds so the enemy could not detect them. His transmissions made sure that the patients were well taken care of.

Caring for patients did not end when Handy's official duties did. He would stroll through the wards to cheer up the patients and hand out candy and sodas. His friendly disposition and thoughtful gifts made him a favorite visitor — and earned him the nickname, Sergeant Santa.

"Minus the war, I had an excellent time," Handy said enthusiastically. "When people [from the different services] joined together, it was amazing what could be accomplished." He added, however, "being shot at wasn't cool." To keep his spirits up during those uncertain times, Handy read letters from a pen pal he had acquired since arriving in the Gulf. When he finally met his war correspondent after he returned home to Orlando, Fla., the two hit it off. In fact, he and Helen are still dating over a year later.

Handy has always enjoyed taking care of people. Before being deployed, he worked with delinquent and abused children, and teens with AIDS. He acted as a role model, teaching them everything from proper hygiene to handling a checking account. "I was really like a mother," he said, grinning and then turned serious. "It was a challenge. If the children felt threatened, they would curl up in a fetal position." Earning their trust was not easy, but it was fulfilling. The kids even asked Handy to fill in as their parent for school events. "Getting paid to take care of and play with kids — what a deal!" he said. These days, Handy earns his pay at Delectable Edibles, a gourmet food shop founded by his brother Michael and run by the family. Handy works in shipping, receiving and sales, and does some cooking and catering.

MIRROR IMAGE? *Well, almost. In his free time, Handy enjoys deep sea fishing and stepping out with his Desert Storm pen pal.*

When he returned from overseas, Handy also immediately resumed full-time status at Valencia Community College. An honor student, he is within six classes of an Associate of Arts degree. "Unfortunately," he said with a grimace, "most of them are math." What he really enjoys is writing. Handy has had one essay published in the college magazine, and three poems are awaiting publication.

Handy certainly exhibits the qualities of an outstanding airman. He, however, does not think he deserves the attention. After all, he was just being himself and doing his job. And that is reward enough for him.

This information was compiled by Capt. Troy S. Horrisberger, a public affairs officer in the Office of the Air Force Surgeon General, Bolling AFB, D.C.